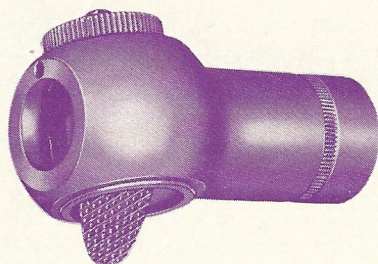


What's New in PROTO

New Power Stud Remover and Setter Is the Fastest Type Ever Designed



Proved by field tests to be much faster and far more efficient than any other design on the market, PROTO's new No. 4510 stud remover and setter is a tool you will be just as proud to sell as your customers will be anxious to buy.

It is an extra husky tool, intended for use on $\frac{1}{2}$ "-drive power or impact guns, but it can be used also with manual socket handles and attachments. It will remove or set studs or broken bolts from $\frac{7}{16}$ " up to $\frac{5}{8}$ ".

The biggest feature is the single, reversible, self-contained wedge. A screw keeps the wedge from falling out and thus saves a user much time because it is always in place—ready to go to work. The wedge is held in proper alignment by a plunger, which also acts as a handle for pulling the wedge back to accommodate large studs. A spring forces the wedge against a stud—a feature that speeds the setting of the tool and prevents accidents since it eliminates the manual adjustment of the wedge.

The plunger, spring and wedge are mounted in a sleeve that is turned by a knurled knob. Thus, to reverse the tool's action, the knob and wedge are simply turned 180°. A ball check holds the wedge assembly in the correct position for either left or right-hand turning.

The teeth of the wedge are very sharp and grip tighter and tighter as pressure is applied. The point of each diamond-shaped tooth is slanted toward the end of the diamond, as in a file or hacksaw, and they really dig into a stud.

The concentric hole design with wedge is far better than eccentric roller types. It requires a much

smaller turning radius and therefore clears more obstructions.

If the wedge should require replacement after long, hard use, a No. 4511 assembly can be secured which consists of a screw, a spring, a push pin and the wedge itself. An old wedge can be removed by simply taking out one screw.

Should a user wish to replace the revolving sleeve assembly, he can obtain a No. 4512 kit, consisting of the sleeve, a lock pin, a wedge pin, a screw and two springs. The sleeve can be removed by taking out the wedge, lining up the holes in the sleeve and remover body, and inserting a wire to depress the spring-loaded pellet.

Every owner of a power or impact gun who has to turn out or set studs will want to buy the 4510 stud remover. Order a stock now and promote it as the best all-around remover ever offered.

Flare Nut Wrench Specs Revised To Increase Utility



Dimensions of our eleven flare nut wrenches were revised recently to adapt them to more jobs, to make them easier to use, and to improve their appearance. As redesigned, they also meet Military Specification MIL-W-15751A, Type XVI.

In the table below, we give both the new and old dimensions. This comparison shows that the boxhead slot was widened in seven wrenches, enabling them to be

Ten Sizes of Box-Type Slugging Wrenches Added



Long Type

Short Type



To supply the needs of various industries for larger opening slugging wrenches of the 12-point box type, ten more sizes have been added to our already extensive line. As shown in the table below, six are short and four are long.

These husky wrenches of special alloy steel are designed for heavy industrial jobs where working space is limited. They conform to military specifications.

SHORT TYPE

No.	Nominal Opening Size	Head Thickness	Overall Lgth.	Wt., Lbs.
USN260	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	10 $\frac{3}{4}$ "	20
USN262	3 $\frac{7}{8}$ "	2 $\frac{1}{4}$ "	10 $\frac{3}{4}$ "	20
USN266	4 $\frac{1}{8}$ "	2 $\frac{3}{8}$ "	11 $\frac{1}{8}$ "	23
USN268	4 $\frac{1}{4}$ "	2 $\frac{3}{8}$ "	11 $\frac{1}{8}$ "	23
USN272	4 $\frac{1}{2}$ "	2 $\frac{3}{8}$ "	11 $\frac{5}{8}$ "	23
USN274	4 $\frac{5}{8}$ "	2 $\frac{3}{4}$ "	11 $\frac{5}{8}$ "	24

LONG TYPE

USN366	4 $\frac{1}{8}$ "	2 $\frac{7}{8}$ "	16"	28
USN368	4 $\frac{1}{4}$ "	2 $\frac{7}{8}$ "	18"	28
USN372	4 $\frac{1}{2}$ "	3"	19 $\frac{3}{4}$ "	34
USN374	4 $\frac{5}{8}$ "	3"	19 $\frac{3}{4}$ "	33

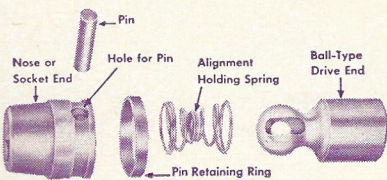
New and Old Flare Nut Wrench Specifications

No.	Opening Size	Slot in Boxhead		Diam. of Boxhead		Head Thickness		Overall Length	
		New	Old	New	Old	New	Old	New	Old
3712	3 $\frac{3}{8}$ "	9 $\frac{3}{32}$ "	7 $\frac{3}{32}$ "	3 $\frac{1}{4}$ "	13 $\frac{1}{16}$ "	5 $\frac{1}{16}$ "	11 $\frac{3}{32}$ "	6 $\frac{1}{4}$ "	6 $\frac{1}{2}$ "
3714	7 $\frac{1}{16}$ "	11 $\frac{1}{32}$ "	9 $\frac{1}{32}$ "	13 $\frac{1}{16}$ "	13 $\frac{1}{16}$ "	11 $\frac{1}{32}$ "	11 $\frac{1}{32}$ "	6 $\frac{3}{8}$ "	6 $\frac{1}{2}$ "
3716	1 $\frac{1}{2}$ "	3 $\frac{3}{8}$ "	3 $\frac{3}{8}$ "	57 $\frac{3}{64}$ "	31 $\frac{3}{32}$ "	7 $\frac{1}{16}$ "	7 $\frac{1}{16}$ "	6 $\frac{1}{2}$ "	6 $\frac{3}{8}$ "
3718	9 $\frac{1}{16}$ "	7 $\frac{1}{16}$ "	7 $\frac{1}{16}$ "	31 $\frac{3}{32}$ "	31 $\frac{3}{32}$ "	7 $\frac{1}{16}$ "	7 $\frac{1}{16}$ "	6 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "
3720	5 $\frac{7}{8}$ "	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{16}$ "	1 $\frac{3}{8}$ "	1 $\frac{3}{8}$ "	6 $\frac{3}{4}$ "	7 $\frac{1}{8}$ "
3724	3 $\frac{3}{4}$ "	5 $\frac{7}{8}$ "	9 $\frac{1}{16}$ "	17 $\frac{3}{32}$ "	19 $\frac{1}{32}$ "	9 $\frac{1}{16}$ "	19 $\frac{1}{32}$ "	7"	7 $\frac{1}{16}$ "
3728	7 $\frac{7}{8}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{16}$ "	18 $\frac{1}{8}$ "	17 $\frac{1}{16}$ "	5 $\frac{7}{8}$ "	21 $\frac{3}{32}$ "	7 $\frac{1}{4}$ "	7 $\frac{3}{4}$ "
3730	15 $\frac{1}{16}$ "	3 $\frac{3}{4}$ "	23 $\frac{3}{32}$ "	115 $\frac{3}{32}$ "	17 $\frac{1}{16}$ "	5 $\frac{7}{8}$ "	21 $\frac{3}{32}$ "	7 $\frac{3}{8}$ "	7 $\frac{3}{4}$ "
3732	1"	3 $\frac{3}{4}$ "	3 $\frac{3}{4}$ "	11 $\frac{1}{2}$ "	119 $\frac{3}{32}$ "	11 $\frac{1}{16}$ "	3 $\frac{3}{4}$ "	7 $\frac{1}{2}$ "	8 $\frac{1}{8}$ "
3734	1 $\frac{1}{16}$ "	13 $\frac{1}{16}$ "	25 $\frac{3}{32}$ "	119 $\frac{3}{32}$ "	119 $\frac{3}{32}$ "	3 $\frac{3}{4}$ "	3 $\frac{3}{4}$ "	7 $\frac{5}{8}$ "	8 $\frac{1}{8}$ "
3736	1 $\frac{1}{8}$ "	7 $\frac{7}{8}$ "	27 $\frac{3}{32}$ "	121 $\frac{3}{32}$ "	13 $\frac{1}{4}$ "	25 $\frac{3}{32}$ "	7 $\frac{7}{8}$ "	7 $\frac{3}{4}$ "	8 $\frac{7}{16}$ "

PROTO Selling Features

*These pointers help
you sell more Tools*

Ball-Type Universal Power Sockets Save Money in Several Ways



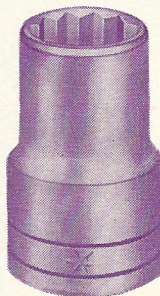
Exploded view of ball-type socket.

It is understandable why the popularity of our ball-type power sockets has grown at a phenomenal rate. While users like them because they operate smoother and do better work than other types, the big reason for their success is that they effect very substantial savings.

For example, only one size of driver end is used for all sockets in a single drive size, reducing the number of extra parts to stock. Where the sockets are used for continuous, high-speed production and the nose eventually becomes worn, only the nose or socket end has to be replaced. Any part, for that matter, may be replaced if it shows wear after long, hard use, so that the owner does not have to buy a whole new socket. A pin retainer ring makes it an easy and fast job to replace any part.

No. 5416 Socket Wins Strength Championship

More proof of PROTO'S *professional quality* was furnished by some recent tests that were conducted to compare our No. 5416 socket with $\frac{1}{2}$ "-drive, $\frac{1}{2}$ "-opening sockets of competitive makes. Structural strength



tests were made on three PROTO sockets and on seven sockets of five other manufacturers.

The results, as given in the accompanying table, show a decided superiority in the PROTO sockets. The seven competitive makes averaged 3,884 inch-pounds, whereas the PROTO sockets averaged 5,200 inch-pounds—a higher strength by 33.9%.

Of equal significance was the

Another way the ball-type design saves money is that it greatly speeds up nut turning. The socket won't back off the work while rotating because no "dead spots" develop and torque is applied constantly. A friction spring holds the nose end at the desired working angle, speeding placement over a nut or bolt.

An additional money-saving feature is the superior strength of these sockets, which prolongs their service life very appreciably. The ball neck is rounded and uses more metal where strength is needed than designs using flat sides. The husky pin has a diameter one-third larger than other universal sockets. Extra strength is secured also by using a pin retainer ring instead of welding the pin to the socket wall, and by increasing the wall thickness where the pin holes are drilled.

Ball-type sockets, for both power and manual use, are available with hexagon $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{9}{16}$ " and $\frac{5}{8}$ " openings in $\frac{3}{8}$ " drive (Nos. 7273-7277), and with hex $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{9}{16}$ ", $\frac{5}{8}$ ", $\frac{11}{16}$ " and $\frac{3}{4}$ " openings in $\frac{1}{2}$ " drive (Nos. 7474-7479).

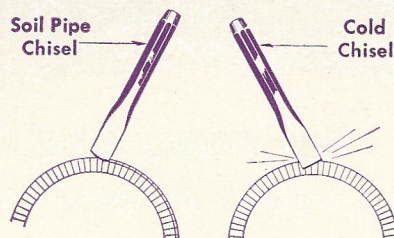
uniform high strength of the three PROTO samples, reflecting our excellent design and careful manufacturing procedures to obtain consistent quality. The three samples of Manufacturer B ranged from 4,000 to 3,620 inch-pounds, and the samples of all five competitors ranged from 5,190 down to 2,900 inch-pounds!

Strength Comparison of $\frac{1}{2}$ "-Drive, $\frac{1}{2}$ "-Opening Sockets

Manufacturer	Sample Number	Applied Torque Load at Which Failure Occurred
PROTO	1.	5,200 Inch-Pounds
PROTO	2.	5,250 Inch-Pounds
PROTO	3.	5,150 Inch-Pounds
Mfr. B	1.	4,000 Inch-Pounds
Mfr. B	2.	3,630 Inch-Pounds
Mfr. B	3.	3,620 Inch-Pounds
Mfr. C	1.	5,190 Inch-Pounds
Mfr. D	1.	2,900 Inch-Pounds
Mfr. E	1.	4,200 Inch-Pounds
Mfr. F	1.	3,650 Inch-Pounds

PROTOMEANS PROFESSIONAL TOOLS

Why Round Edge Chisels Are Needed for Soil Pipe

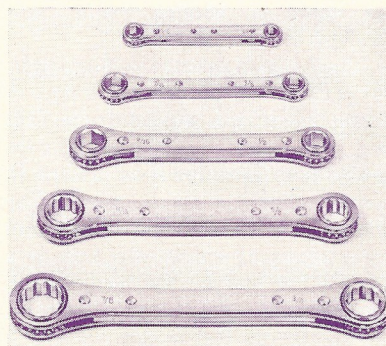


Cast iron soil pipe is cut by marking around the entire outside diameter with a shallow chisel cut, increasing the depth of the cut until the pipe separates cleanly at the marking.

PROTO soil pipe chisels—Nos. 37 $\frac{1}{2}$ ", 37 $\frac{5}{8}$ " and 37 $\frac{3}{4}$ "—are designed especially for this work and have a rounded edge. This type of cutting edge eliminates much of the danger of splitting the pipe—something that often occurs when trying to do the job with a sharp cornered, straight-edged cold chisel.



Ratcheting Box Wrench Users Include Plumbers and Brake Repairmen



Ever since our new line of ratcheting box wrenches was announced in the March-April NEWS, we have been hearing of interesting applications. Plumbers, for instance, use them for many jobs and find them particularly handy for turning the chrome-plated acorn hold-down nuts on water closets.

Almost all brake repair stations need the No. 1193, with $\frac{1}{2}$ " x $\frac{9}{16}$ " openings, and the No. 1194, with $\frac{5}{8}$ " x $\frac{11}{16}$ " openings. These two wrenches are used principally on the master cylinders that are close to the frame and difficult to get at with any other type of wrench.

The five ratcheting box wrenches in the line have ten opening sizes, from $\frac{1}{4}$ " to $\frac{7}{8}$ ", and therefore have a wide range of uses.